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EXAMINER
LEE, ANDREW CHUNG CHEUNG

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 09/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	**Applicant(s)**
Office Action Summary	10/087,399	JACKSON, J. TIMOTHY
	Examiner	**Art Unit**	
	Andrew C. Lee	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 2002*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-10,12-17,21-25,27-30,32-36,38-42 and 44-50* is/are rejected.

7)☒ Claim(s) *18,19,20,26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/10/2002*.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Drawings

1.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because

they include the following reference character(s) not mentioned in the description:

Regarding Fig. 3, page 7, paragraph [0025], line 3, the subject matter "network 31" is not

disclosed explicitly in the specification. Corrected drawing sheets in compliance with 37

CFR 1.121(d), or amendment to the specification to add the reference character(s) in the

description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to

avoid abandonment of the application. Any amended replacement drawing sheet should

include all of the figures appearing on the immediate prior version of the sheet, even if only

one figure is being amended. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office

action. The objection to the drawings will not be held in abeyance.

Specification

2.   The disclosure is objected to because of the following informalities:

Regarding page 7, paragraph [0025], line 3, the numerical 30 had been indicated

twice but refer to two different subject matters.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 21 disclosed as apparatus wherein it claims method as comprising means.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1, 13, 14, 22, 2, 15, 23, 28, 46, 50, 3, 16, 24, 29, 47, 4, 17, 25, 30, 48, 6, 7, 33, 8, 34, 40, 9, 35, 41, 10, 36, 42, 12, 38, 44, 21, 27, 32, 39, 45, 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thi et al. (Pub. No. US 2002/0061012 A1) in view of Azadet et al. (US 7089485 B2).

Regarding claims 1, 13, 14, 22, Thi et al. disclose the limitation of a communication system (Fig. 2, Fig. 36), comprising: a receiving unit (recited "network gateway" as receiving unit; page 29, paragraph [0323]); and a transmitting unit operatively coupled to the receiving unit via a first channel (recited "head end/cable modem termination system"

as transmitting unit, and "hybrid fiber coaxial network and downstream" as via a first

channel; Fig. 2, Fig. 36, page 4, paragraph [0106]), the transmitting unit being configurable

to transmit a first data stream to the receiving unit in the first channel, the first data stream

containing communications data and control data (Fig. 14 , page 15, paragraph [0204],

[0209], [0210]), wherein the transmitting unit transmits the first data stream so that

communications data is transmitted in a grouping that complies with an asynchronous

protocol (Fig. 14, paragraph [0209]) and Thi et al. do not disclose explicitly the control data

is transmitted within a segment of the first data stream that is specified as unused for

communications data according to the asynchronous protocol. Azadet et al. disclose the

limitation of the control data is transmitted within a segment of the first data stream that is

specified as unused for communications data according to the asynchronous protocol

(recited "control portion" as control data, and IPG as unused for communications data

according to the asynchronous protocol; Fig. 2, column 4, lines 11 – 28). It would have

been obvious to one of ordinary skill in the art at the time the invention was made to

modify Thi et al. to include the control data is transmitted within a segment of the first data

stream that is specified as unused for communications data according to the

asynchronous protocol such as that taught by Azadet et al. in order to provide a data

structure, method, apparatus and protocol that utilizes the so-called inter-packet gap (IPG)

to store a relatively long termination flag and a relatively short sequence identification

nonce (as suggested by Azadet et al., see column 2, lines 12 – 16).

Regarding claims 2, 15, 23, 28, 46, 50, Thi et al. disclose the limitation of the

communication system of claimed wherein the asynchronous protocol conforms to an

Ethernet standard and the grouping is an Ethernet compliant frame (recited "asynchronous

serial interface" as asynchronous protocol; Fig. 3, paragraph [0147], recited "IEEE Std

802.3" as Ethernet standard and the grouping is an Ethernet compliant frame; paragraphs

[0120], [0132], [0133], Fig. 14).

Regarding claims 3, 16, 24, 29, 47, Thi et al. disclose the limitation of the

communication system of claimed wherein the segment includes an inter-frame gap

according to the asynchronous protocol (recited "IFG" as segment includes an inter-frame

gap; Fig. 22, Fig. 24, page 17, paragraph [0227]).

Regarding claims 4, 17, 25, 30, 48, Thi et al. disclose the limitation of the

communication system of claimed wherein the segment includes an idle period according

to the asynchronous protocol (recited " repeatedly send the idle code group between

packets" as the segment includes an idle period according to the asynchronous protocol;

page 12, paragraph [0179]).

Regarding claims 6, Thi et al. disclose the limitation of the communication system

(Fig. 2) of claimed further comprising a device (recited "a modem" as a device) coupled to

the receiving unit (recited "network gateway" as receiving unit; page 5, paragraph [0117]),

wherein the device is configured to exchange communications data with the receiving unit

over a second channel in a second data stream conforming to the asynchronous protocol
(page 9, paragraph [0147]).

Regarding claims 7, 33, Thi et al. disclose the limitation of the communication
system (Fig. 2) of claimed wherein the receiving unit recited "network gateway" as receiving
unit) includes a first interface unit coupled to the first channel (recited "a first network port
interface with a cable head end" as first interface unit coupled to the first channel page 1,
paragraph [0008]); a controller unit coupled to the first interface unit (recited "a processor
coupled to each of the ports" as a controller unit coupled to the first interface unit; and a
second interface unit coupled to the second channel (recited " a second network port to
interface to a local area network"; page 1, paragraph [0008]).

Regarding claims 8, 34, 40, Thi et al. disclose the limitation of the communication
system of claimed wherein the controller unit (recited "controller portion" as the controller
unit, Fig. 9, paragraph 13, paragraph [0183]) includes: a first processor to process control
data (recited "RX protocol logic" as a first processor to process control data; Fig. 9,
paragraph 13, paragraph [0183]); and a second processor (recited "TX protocol logic" as a
second processor) coupled to the first processor and the first interface unit, wherein the
second processor is capable of transferring control data between the first interface unit and
the first processor (Fig. 9, paragraph 13, paragraph [0183]).

Regarding claims 9, 35, 41, Thi et al. disclose the limitation of the communication system of claimed wherein the second processor is further capable of transferring control data between the second interface unit and the first processor (Fig. 9, paragraph 13, paragraph [0183]).

Regarding claims 10, 36, 42, Thi et al.disclose the limitation of the communication system of claimed wherein the second processor is further capable of transferring communications data between the first and second interface units (Fig. 9, paragraph 13, paragraph [0183]).

Regarding claims 12, 38, 44, Thi et al. disclose the limitation of the communication system of claimed wherein the second channel is a wired channel (recited "communicate with the node via coaxial cable" as the second channel is a wired channel; Fig.2, Fig. 36, page 4, paragraph [0106]).

Regarding claim 21, Thi et al. disclose the limitation of an apparatus for use in a communication system (recited "network gateway" as an apparatus), the communication system having a first channel to support transmission according to an asynchronous Protocol (recited "HFC network 10a" as first channel, page 16, paragraph [0220]), comprising: means for detecting a first segment in a first data stream to be transmitted in the first channel (recited "controller portion of Ethernet MAC" as means for detecting a first segment; page 13, paragraph [0183]), wherein the first segment is specified as unused for

data according to the asynchronous protocol (Fig. 22, Fig.24, IFG as first segment is

specified as unused for data; paragraph [0183], [0227] ; and means for transmitting the

first data stream in the first channel (page 13, paragraph [0183], [0184]), Thi et al. do not

disclose explicitly wherein the first data stream includes control data being transmitted

within the first segment. Azadet et al. disclose the limitation of wherein the first data stream

includes control data being transmitted within the first segment (recited "control portion" as

control data; Fig. 2, column 4, lines 11 – 28). It would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify Thi et al. to include wherein the

first data stream includes control data being transmitted within the first segment such as

that taught by Azadet et al. in order to provide a data structure, method, apparatus and

protocol that utilizes the so-called inter-packet gap (IPG) to store a relatively long

termination flag and a relatively short sequence identification nonce (as suggested by

Azadet et al., see column 2, lines 12 – 16).

Regarding claim 27, Thi et al. disclose the limitation of a communication system (Fig.

2, Fig. 36), comprising: a first network (recited "HFC network 10b" as first network; Fig.2); a

first transceiver coupled to the first network (recited "head end 12 /cable modem

termination system" as a first transceiver coupled to the first network; Fig. 2, page 5,

paragraph [0117]); a second transceiver (recited "network gateway" as second transceiver)

operatively coupled to the first transceiver via a first channel (page 5, paragraph [0118]),

the second transceiver being configurable to transmit a first data stream to the first

transceiver in the first channel, the first data stream containing communications data and

control data (Fig. 14 , page 15, paragraph [0204], [0209], [0210]), wherein the second

transceiver transmits the first data stream so that communications data is transmitted in a

grouping of the first data stream that complies with an asynchronous protocol (Fig. 14,

paragraph [0209) and a second network coupled to the second transceiver (recited"

coupled to local area network" as a second network coupled to the second transceiver; Fig.

2, page 5, paragraph [0117]). Thi et al. do not disclose explicitly the control data is

transmitted within a segment of the first data stream that is specified as unused for

communication data according to the asynchronous protocol. Azadet et al. disclose the

limitation of the control data is transmitted within a segment of the first data stream that is

specified as unused for communications data according to the asynchronous protocol

(recited "control portion" as control data, and IPG as unused for communications data

according to the asynchronous protocol; Fig. 2, column 4, lines 11 – 28). It would have

been obvious to one of ordinary skill in the art at the time the invention was made to modify

Thi et al. to include the control data is transmitted within a segment of the first data stream

that is specified as unused for communications data according to the asynchronous

protocol such as that taught by Azadet et al. in order to provide a data structure, method,

apparatus and protocol that utilizes the so-called inter-packet gap (IPG) to store a relatively

long termination flag and a relatively short sequence identification nonce (as suggested by

Azadet et al., see column 2, lines 12 – 16).

Regarding claim 32, Thi et al. disclose the limitation of the communication system of

claimed wherein the communications data was received from the second network for

transmission to the first network (recited "network gateway may also couple a local area

network (as second network) and "far end HFC network 10b" as first network; Fig. 2, page

5, paragraph [0117]).

Regarding claims 39, 45, Thi et al. disclose the limitation of a transceiver (recited

"network gateway" as a transceiver, page 1, paragraph [0008]) for use in a communication

system (Fig. 2) having a first channel (recited "HFC network coupled to cable head end" as

first channel port; page 1, paragraph [0008]) and a second channel (coupled to Local area

network as second channel; page 1, paragraph [0008]), the first and second channels to

respectively support transmission according to first and second asynchronous protocols

(recited "IEEE 802.3 compliant media independent interface" as support transmission

according to first and second asynchronous protocols; page 6, paragraph [0120]), the

transceiver comprising: a first interface unit coupled to the first channel (recited "a first

network port interface with a cable head end" as first interface unit coupled to the first

channel; page 1, paragraph [0008]paragraph [0008]); a second interface unit coupled to the

second channel (recited "a second network port interface to a local area network" as

second interface unit coupled to the second channel; page 1, paragraph [0008]); and

a controller unit coupled to the first interface unit (recited "a processor coupled to each of

the ports" as a controller unit coupled to the first interface unit; page 1, paragraphs [0008]

[0183]), the controller unit to cause the transceiver to transmit a first data stream through

the first channel via the first interface unit, the first data stream containing communications

data and control data (Fig. 14 , page 15, paragraph [0204], [0209], [0210), wherein the

transceiver transmits the first data stream so that communications data is transmitted in a

grouping of the first data stream that complies with the first asynchronous protocol (Fig. 14,

paragraph [0209) and Thi et al. do not disclose explicitly the control data is transmitted

within a segment of the first data stream that is specified as unused for communication data

according to the first asynchronous protocol. Azadet et al. disclose the limitation of the

control data is transmitted within a segment of the first data stream that is specified as

unused for communications data according to the first asynchronous protocol (recited

"control portion" as control data, and IPG as unused for communications data according to

the asynchronous protocol; Fig. 2, column 4, lines 11 – 28). It would have been obvious to

one of ordinary skill in the art at the time the invention was made to modify Thi et al. to

include the control data is transmitted within a segment of the first data stream that is

specified as unused for communications data according to the first asynchronous protocol

such as that taught by Azadet et al. in order to provide a data structure, method, apparatus

and protocol that utilizes the so-called inter-packet gap (IPG) to store a relatively long

termination flag and a relatively short sequence identification nonce (as suggested by

Azadet et al., see column 2, lines 12 – 16).

Regarding claim 49, Thi et al. disclose the limitation of the transceiver of claimed

wherein the controller unit is configured to cause the transceiver to transmit a second data

stream through the second channel via the second interface unit, the second data stream

complying with the second asynchronous protocol (Fig. 3, element Ethernet MAC, page 13,

paragraph [0183]).

6.   Claims 5, 11, 31, 37, 43 rejected under 35 U.S.C. 103(a) as being unpatentable over

Thi et al. (Pub. No. US 2002/0061012 A1) and Azadet et al. (US 7089485 B2) as applied to

claims 1, 13, 14, 22, 2, 15, 23, 28, 46, 50, 3, 16, 24, 29, 47, 4, 17, 25, 30, 48, 6, 7, 33, 8,

34, 40, 9, 35, 41, 10, 36, 42, 12, 38, 44, 21, 27, 32, 39, 45, 49 above, and further in view of

Aburakawa et al. (Pub No. US 2002/0109887 A1).

Regarding claims 5, 11, 31, 37, 43, Thi et al. and Azadet et al. do not disclose

explicitly the limitation of the communication system of claimed wherein the first channel is

a free space optical system. Aburakawa et al. disclose the limitation of the communication

system of claimed wherein the first channel is a free space optical system (recited "the

optical signals transmitted from the transmitting station via the atmosphere are received by

the optical space receiver" as the first channel is a free space optical system; Fig. 1, page

1, paragraphs [0005], [0009]). It would have been obvious to one of ordinary skill in the art

at the time the invention was made to modify Thi et al. and Azadet et al. to include a

communication system of claimed wherein the first channel is a free space optical system

such as that taught by Aburakawa et al. in order to provide an optical transmitting/

receiving system for securing a high quality of communication by reducing the propagation

loss and for enabling the system to take advantage of easy installation, and to provide an

optical communication network that can be easily established by employing the system (as

suggested by Aburakawa et al., see page 1, paragraph [0011]).

Allowable Subject Matter

7.   Claims 18, 19, 20, 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Oh (6778551 B1) discloses providing ethernet collision control systems and methods for an ethernet network utilizing a media access controller (MAC) which inserts a counter code in the inter-frame gap (IFG) between frame units when transmitting data of a data size which exceeds the capacity of a single frame of the ethernet protocol.

Willebrand et al. (US 6763195 B1) disclose a hybrid wireless optical and radio frequency (RF) communication link utilizing parallel free-space optical and RF paths for transmitting data and control and status information. The optical link provides the primary path for the data, and the RF link provides a concurrent or backup path for the network data, as well as a reliable and primary path for the control and status information.

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571) 272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ACL   Sep 05, 2006

RICKY Q. NGO
SUPERVISORY PATENT EXAMINER